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POWERED WHEELCHAIR RAMP FOR MINIVANS

ABSTRACT

5 A powered wheelchair ramp includes a drive mechanism  
having a gear, a cam, and a lever arm keyed to a common  
shaft to prevent relative motion among these elements. An  
electric motor drives the gear through a clutch and the  
lever arm raises or lowers a folding ramp. Energy storage  
10 ~~means~~ <sup>device</sup> engage the cam through a follower for storing energy  
as the ramp is lowered. The energy storage ~~means~~ <sup>device</sup> also  
damps the motion of the ramp. When the ramp is raised, the  
energy storage ~~means~~ <sup>device</sup> aids lifting the ramp. The torques  
15 applied to the common shaft are such that the net torque in  
either direction about the shaft is below a predetermined  
amount. The result is that the ramp can be raised and  
lowered easily, even by a single person in a wheelchair  
sitting beside the ramp. The clutch is released for manual  
operation and can engage at any point for powered  
20 operation.